



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Voices for SSL Efficiency 2008

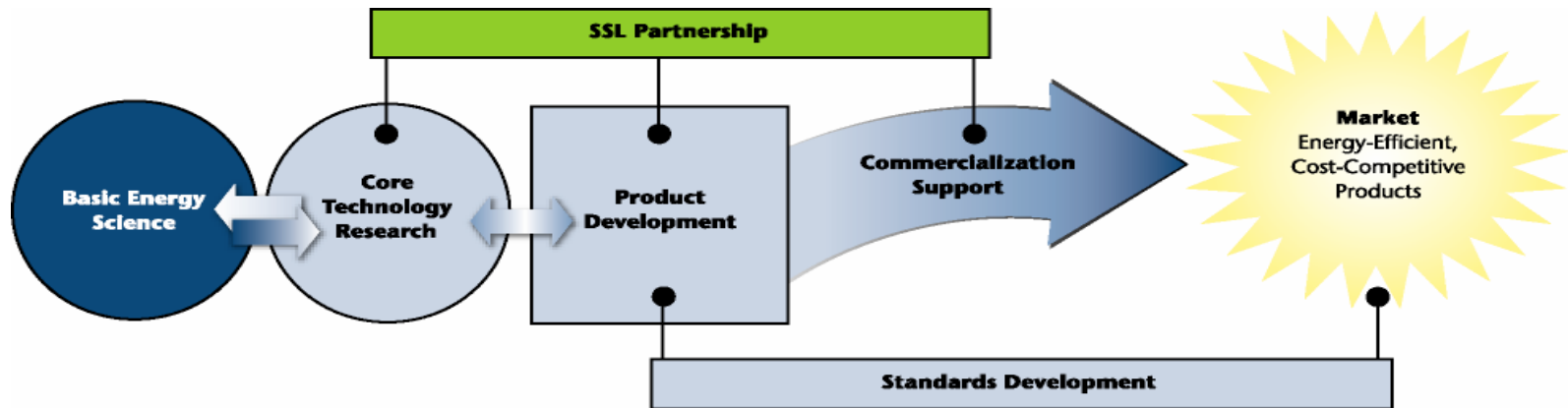
Annual Market Introduction Workshop

James R. Brodrick, Ph.D.
U.S. Department of Energy

July 9-11, 2008
Portland, Oregon



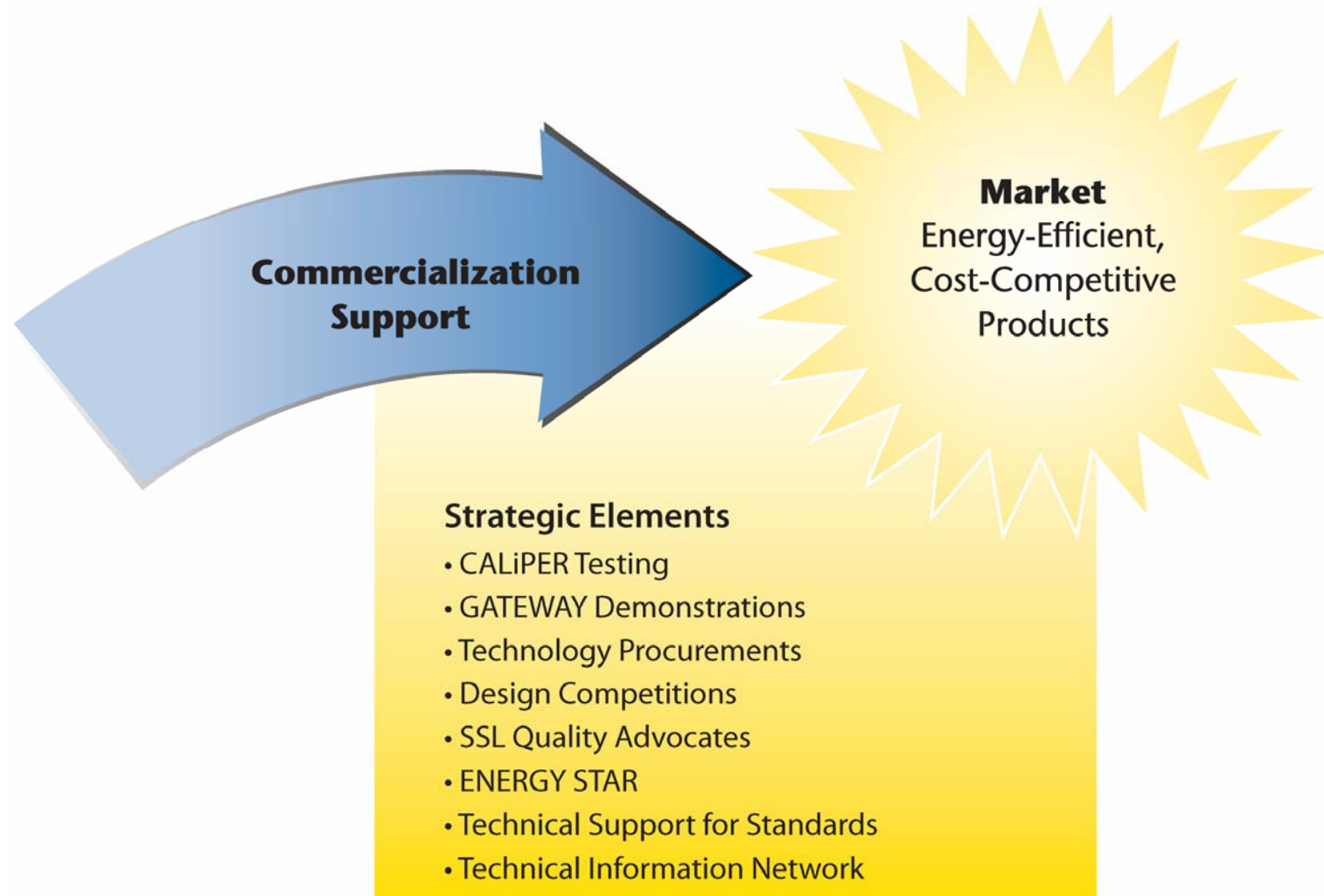
DOE Solid-State Lighting Program Strategy



Guiding technology advances from
laboratory to marketplace



SSL Pathways to Market





SSL Quality Advocates



L•PRIZE™



Retailer
Energy Alliance

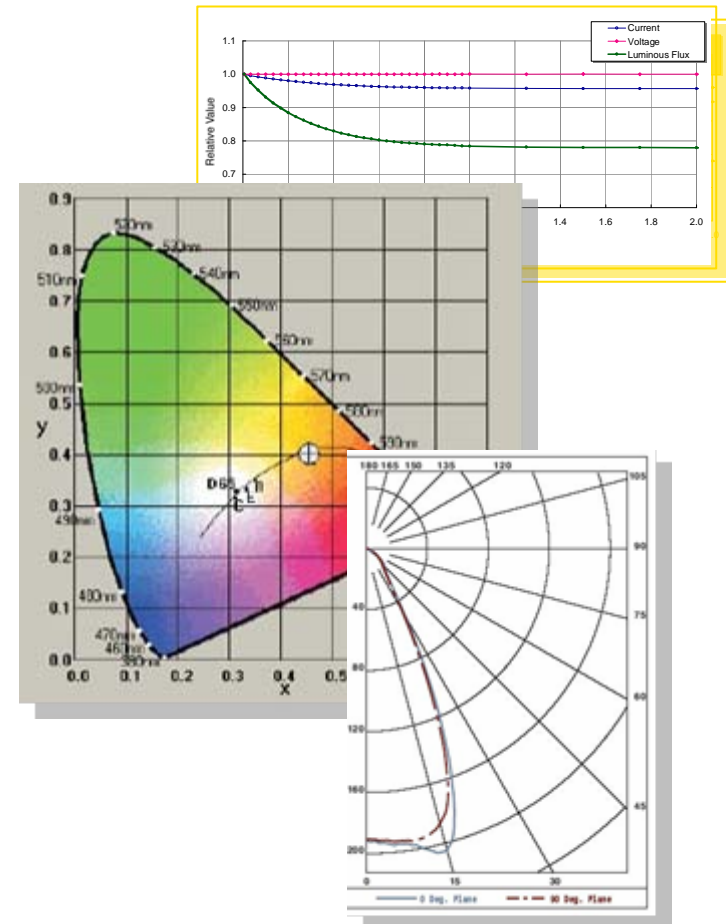


STANDARDS



CALiPER Guides Planning & Fosters Developing Market

- CALiPER: Supports testing of wide array of SSL, benchmark, and demo products
- Rounds 1 – 5 completed
 - Included undercabinet, step/wall, outdoor, and task/desk lighting, downlights, and replacement lamps
- Summary analysis, detailed test reports available





SSL Quality Advocates

Quality is everyone's responsibility.

W. Edwards Deming

- Joint effort: DOE and NGLIA
- Goal: Assure and improve quality of SSL products
- Initial efforts
 - Brochure on LED luminaire performance
 - SSL Quality Pledge (coming soon)
 - More to come





Standards and Test Procedures Support



- DOE workshops in 2006 and 2007
- Released:
 - Chromaticity (ANSI C78.377A)
 - Photometric Measurement (LM-79)
- Very near completion:
 - Lumen Depreciation (LM-80)
- In process:
 - Safety (UL 8750)
 - SSL-LED power supply (C82.SSL1)
 - Definitions/nomenclature (IESNA RP-16)





DOE ENERGY STAR for SSL

- Announced September 2007
- Labeled products available October 2008
- Covers task, undercabinet, outdoor porch, step and pathway lighting, and recessed downlights
- Developed in collaboration with key standards organizations and input from stakeholders
- ENERGY STAR will accelerate market penetration of better performing, higher efficiency products





GATEWAY Demonstrations Showcase SSL Products in Real Applications

- City of Oakland: street lighting
- Federal Aviation Administration: walkway lighting
- Additional demonstrations under way
- Open solicitation timeframe
- User groups being formed
 - Municipalities
 - Academia
 - Retailers



Oakland demonstration, with Beta LED streetlights (foreground) and HPS streetlights (background). Photo: Beta LED.



GATEWAY Demonstrations for Retailer Energy Alliance

- Newly launched DOE alliance
- Goal: Provide tools to help retailers tackle energy challenges
- Parking lot lighting and other SSL demonstrations in planning stages

REA Steering Committee

- Wal-Mart
- Target
- Whole Foods Market
- Best Buy
- Food Lion
- Home Depot
- Kohl's
- McDonald's
- Staples
- ASHRAE
- IESNA



SSL Technical Information Network



Northeast Energy Efficiency Partnerships, Inc.

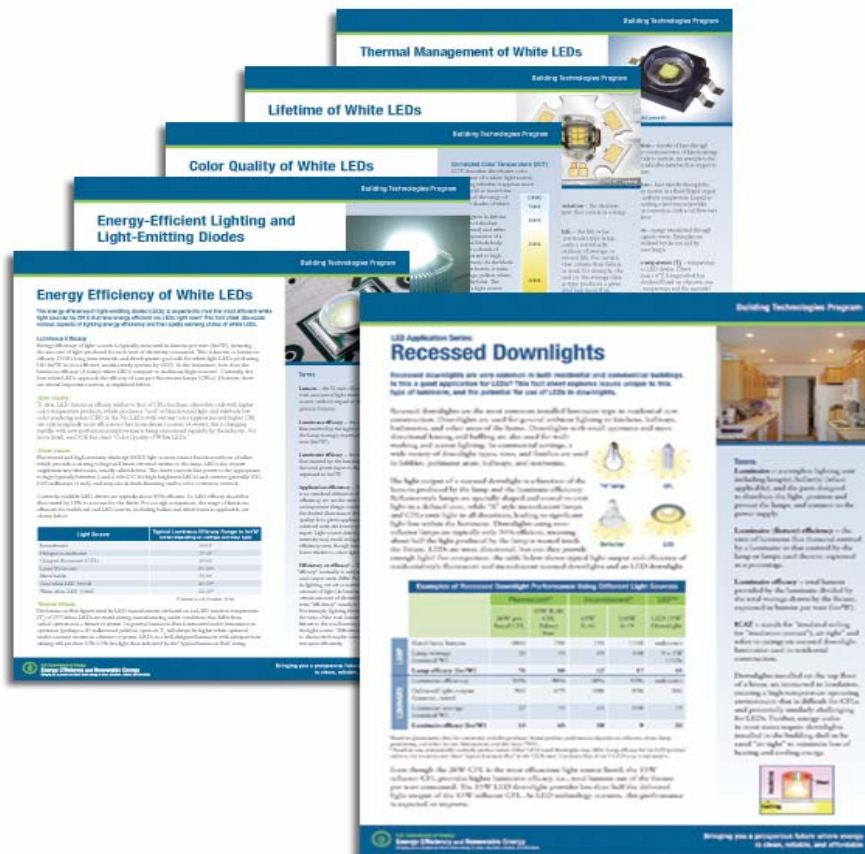


- Goal: increase awareness of SSL technology, performance, and appropriate applications
- Created with support from competitively selected partners
- Members:
 - Regional energy efficiency organizations and program sponsors
 - Utilities
 - State and local energy offices
 - Lighting trade groups
 - Other stakeholders



SSL Technology Fact Sheet Series

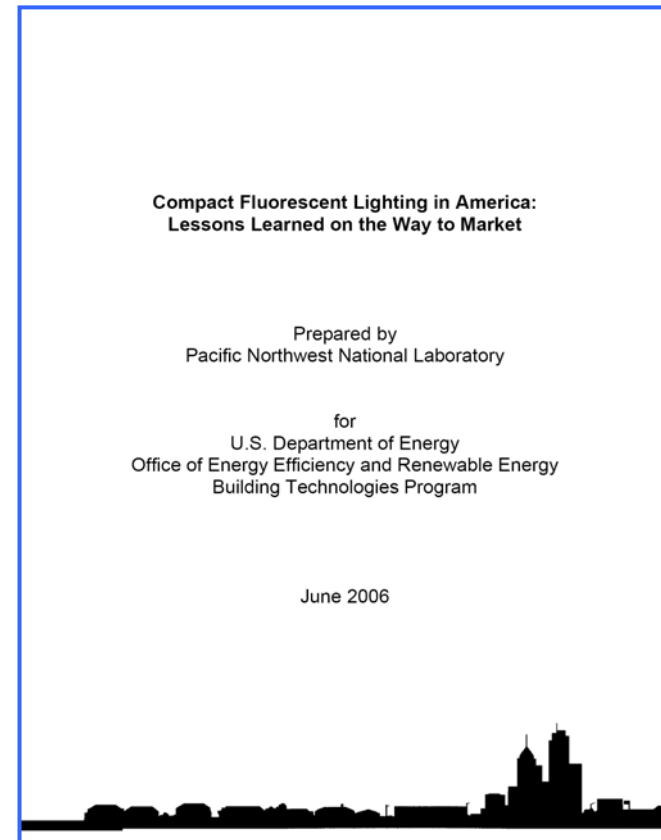
- LED Basics
 - Energy Efficiency
 - Thermal Management
 - Lifetime
 - Color Quality
- Application Series
 - Recessed Downlights
 - Undercabinet
 - Portable Desk/Task
 - Using LEDs
 - Dimming LEDs
- Measurement Series
 - SSL Standards
 - CRI and LEDs
 - Luminaire Efficacy





Coming: Market Studies and Technical Evaluations

- Life cycle environmental analysis of SSL
- Studies of the cost-effectiveness of SSL for specific lighting applications
- Extending CFL Lessons Learned Study to SSL
- Others





DOE Solid-State Lighting Website

- Current information on SSL program, progress, and events
- SSL publications
 - Roadmaps
 - Reports
 - Technical fact sheets
- Solicitations
- Register for ongoing SSL UPDATES at www.netl.doe.gov/ssl

The screenshot shows a web browser window titled "Solid-State Lighting" with the URL <http://www.netl.doe.gov/ssl/index.html>. The page features the U.S. Department of Energy logo and the text "Energy Efficiency and Renewable Energy". A green banner at the top reads "Building Technologies Program" and "Solid-State Lighting". The main content area is divided into several sections:

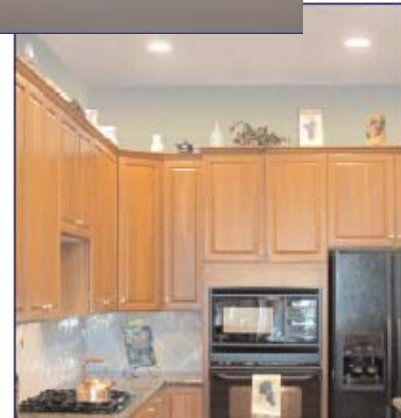
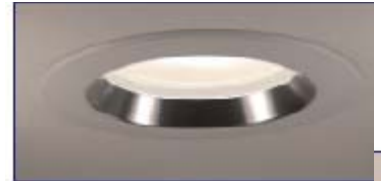
- DOE SSL Strategy**: Includes links to R&D Project Portfolio, Market-Based Programs, ENERGY STAR, Commercial Product Testing Program, Standards Development, Technical Information Network, Technology Demonstrations, Design Competitions, Using LEDs for General Illumination, LED Basics, LED Application Series, LED Measurement Series, Funding Opportunities, Publications, Related Articles, and Home.
- DOE Solid-State Lighting Portfolio**: Contains a paragraph about the U.S. Department of Energy and its partners working to accelerate advances in solid-state lighting, and another paragraph stating that no other lighting technology offers the Department and our nation so much potential to save energy and enhance the quality of our building environments.
- UPDATES**: A list of recent updates, including: Webcast: DOE Five-Year SSL Commercialization Support Plan July 2, 2007; Webcast Presentation (PDF 1MB); Voices for SSL Efficiency: DOE SSL Workshop July 16-17, 2007; Funding Opportunity Released for Product Development (Round 4); DOE Awards Five SBIR Phase 1 Grants for SSL; Funding Opportunity Released for Core Technology Research (Round 4); Research Call Released for Core Technology (Round 4) (MODIFIED) (PDF 159 KB); DOE Announces Selections for SSL Core Technology and Product Development (Round 3); DOE Releases Updated Multi-Year Program Plan (PDF 2 MB); Invitation to Participate in DOE SSL Demonstrations (CLOSED); Voices for SSL Efficiency: DOE SSL Workshop April 23-24, 2007; Workshop Highlights; Workshop Materials; Workshop Report (PDF 1MB); and Archives.
- R & D SPOTLIGHT**: Features three images with captions: "Record efficacy in white OLED", "LED record efficacy and brightness", and "Record EQE in blue OLED device".
- COMMERCIALIZATION SUPPORT SPOTLIGHT**: Features three images with captions: "DOE releases draft ENERGY STAR requirements", "DOE and IESNA sign MOU", and "NGLIA collaborates on draft ENERGY STAR criteria, MYPP updates".

At the bottom of the page, there is a footer with links: "Webmaster | Security & Privacy | Building Technologies Program Home | EERE Home" and the text "U.S. Department of Energy".



Lighting for Tomorrow: SSL Competition

- Sponsored by DOE, ALA, CEE
- Focus on residential lighting
- 2007 winners:
 - LED Lighting Fixtures, Inc. – LR6 downlight
 - Finelite – PLS desk lamp and undercabinet fixtures
 - Progress Lighting – Strata outdoor wall lantern
- 2008 competition:
 - Fixtures that meet ENERGY STAR
 - Other decorative fixtures
 - Future LED Showcase
 - Winners announced September '08





Next Generation Luminaires

- Sponsored by DOE, IALD, IES
- Focus on commercial LED luminaires
- Launched in May 2008
 - Entries due – September '08
 - Winners announced – February '09





L Prize

- Focus on two replacement technologies:
 - 60 W Incandescent
 - PAR 38 Halogen
- Future focus: 21st Century Lamp
- Significant cash prizes, opportunities for federal purchasing agreements, utility programs, other incentives

L•PRIZE™



Thank you...



Voices for SSL Efficiency 2008

Sponsored by the U.S. Department of Energy, Northwest Energy Efficiency Alliance, Energy Trust of Oregon, Puget Sound Energy, Bonneville Power Administration